EXHIBIT 9

Bitcoinizing the Dollar, and the World, with Lightning $\gg 9$





Welcome to the April edition of the Lightning Lab, a newsletter filled with Lightning Network updates, community coverage, and, of course, memes! In this issue, we discuss a new Taproot-native protocol for issuing and transferring assets on Bitcoin and Lightning, the Lightning Labs fundraise, and a host of community launches, funding announcements, and news! Bitcoin 2022 in Miami had enough news and announcements to justify its own special edition, so keep your eyes out for that coming soon.™

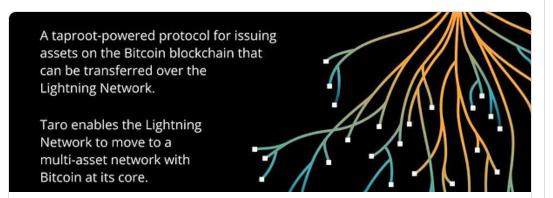
Bitcoinizing the Dollar, and the World, with Lightning * 900

Last week we <u>announced Taro</u>, a new Taproot-powered protocol for issuing assets on the bitcoin blockchain that can be transferred over the Lightning Network for instant, high volume, low fee transactions. This announcement marks a big shift to a multi-asset Lightning Network with the potential for the world's currencies to route through bitcoin liquidity on the network. At its core, Taro taps into the security and stability of the bitcoin network and the speed, scalability, and low fees of Lightning. Together with the new protocol, we <u>also announced our \$70M Series B fundraise</u> to further build out Lightning Network infrastructure and help Number of People Go Up.

For more details, we recommend reading our <u>blog posts</u>, the technical <u>Bitcoin Improvement Proposals (BIPs)</u> themselves, or these tweets from our fantastic community!



Taro - if it passes the peer review test - can bring the usecase of issuing and transfering digital assets that aren't bitcoin UTXOs to the LNP/BP stack. If Taro is able to do this, it renders all of the competing altcoin narratives obsolete overnight.



tftc.io

Issue #1189: Taro hits the scene

9:04 PM · Apr 5, 2022

1,526 Likes 293 Retweets



Lucas Nuzzi @LucasNuzzi

Taro's design is brilliant.

With it, you'll be able to issue assets on a ledger that is basically nested within a bitcoin-taproot transaction.

Unlike ERCs, issuers will have strong privacy assurances around the ledger itself and the scalability of Lightning (unbounded TPS).



Olaoluwa Osuntokun @roasbeef

I'm soo excited to finally publicly publish a set of draft BIPs for Taro, a Taproot Asset Representation Overlay: https://t.co/2naeQhyJ6V

Taro uses the Taproot script tree to commit to extra structure metadata which enables the representation and transfer of assets on Bitcoin

6:40 PM · Apr 5, 2022

165 Likes **41** Retweets



ALYSE @AlyseKilleen

Congratulations to the Lightning Labs Team & cofounder CTO @roasbeef. Genius!

NPgU means being responsive to feedback gained during tech adoption, and the strength of the infrastructure => adoption => infrastructure => adoption cycle is on display here.



medium.com

Number of People Go Up, or Bitcoin as the World's Protocol of Value

3:34 PM · Apr 5, 2022

20 Likes 1 Retweet



Lyn Alden @LynAldenContact

Lightning Labs raised \$70m and is planning to develop technologies to more easily transfer dollars over the Lightning network.

Small cross-border payments remain an under-served market, filled with legacy players.



Bloomberg Crypto @crypto

Lightning Labs is bringing in new financing as it creates a protocol to facilitate fiat currency transfers to Bitcoin https://t.co/XmknwpNUL2

8:56 PM · Apr 5, 2022

820 Likes 73 Retweets



allen farrington @allenf32

chapter 7. page 194. TARO.

buy my book for more reality spoilers 👍

And, in fact, the space is evolving so fast that we are rushing to cite evolving applications as this book goes to print. But it is looking likely that it will be possible to link DLCs to Lightning also (excitingly, in a taproot-native manner, for the technically inclined) so as to issue Lightning-native assets with interestingly different properties to sidechain tokens. Again, avoiding the technical weeds, the most tantalizing proposition seems to us to be Lightning stablecoins, less so because they are intrinsically worthwhile or interesting and more because they suggest an immediate and enormous opportunity: to obsolete credit card networks, issuing and acquiring banks, and replacing the expensive legacy system of "payment by credit relay" with fiat-denominated and fiat-backed free and instant value transfer.

1:11 PM · Apr 6, 2022

135 Likes 15 Retweets



Imagine billions of people moving any form of money at any frequency anywhere over the #bitcoin network. \$\frac{1}{2}\$



cnbc.com

There's a new way to quickly send U.S. dollars around the world with bitcoin

5:06 PM · Apr 5, 2022

6,902 Likes **1,057** Retweets



Danny Scott ∮
@CoinCornerDanny

.@lightning's Taro is a great example of technology built correctly in layers, on a strong foundation that is #Bitcoin

In theory this helps scale stablecoins/tokens and makes a lot of altcoin use cases redundant.

Excited to see where this goes 4

4:59 PM · Apr 5, 2022

102 Likes 15 Retweets



Pomp \(\frac{1}{3} \)

@APompliano

Lightning Labs just announced a new protocol called Taro.

The goal is to build a "new Taproot-powered protocol for issuing assets on the bitcoin blockchain that can be transferred over the Lightning Network for instant, high volume, low fee transactions"



lightning.engineering

4:12 PM · Apr 5, 2022

714 Likes 138 Retweets



Sonali Basak @sonalibasak

From @lightning - @starkness sees the new Taro protocol facilitating Bitcoin transfers at a greater scale. bloomberg.com/news/articles/... @crypto

"In essence, dollars will route through the Bitcoin monetary network using Lightning," the firm said. "This new protocol cements Bitcoin in its place as the internet's native digital money and protocol for value transfer."

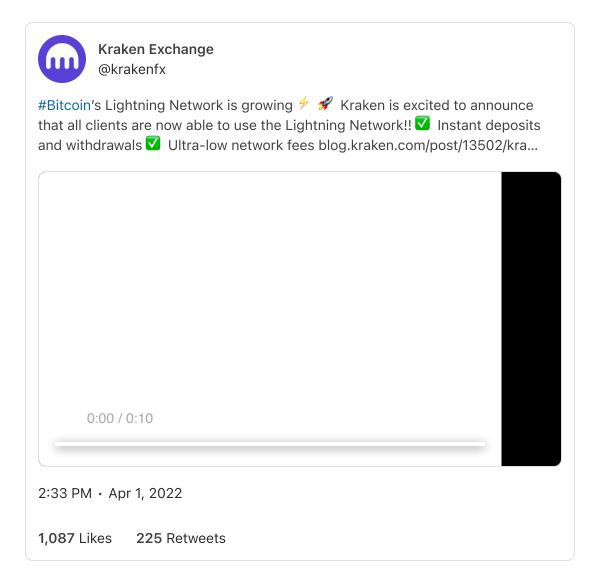
6:58 PM · Apr 5, 2022

51 Likes 12 Retweets

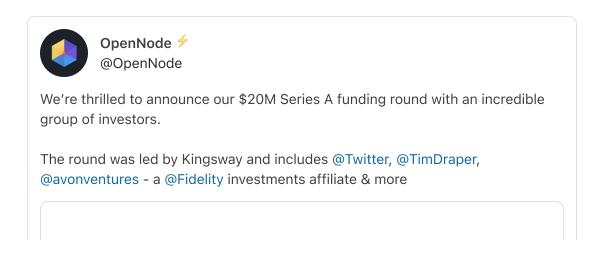
Additionally, Bitcoin Magazine published an excellent technical overview of the Taro protocol quoting both CEO Elizabeth Stark and CTO Olaoluwa Osuntokun and discussing "Lightning as a decentralized backbone payment network." CNBC wrote that Taro plus the Lightning Network could "serve as a hybrid of the SWIFT financial messaging system (the communication layer) and correspondent banking (routing component)." CEO Elizabeth Stark was also covered in Bloomberg, TechCrunch, Forbes, CoinDesk, The Block, and Decrypt, with many more picking up the story as well.

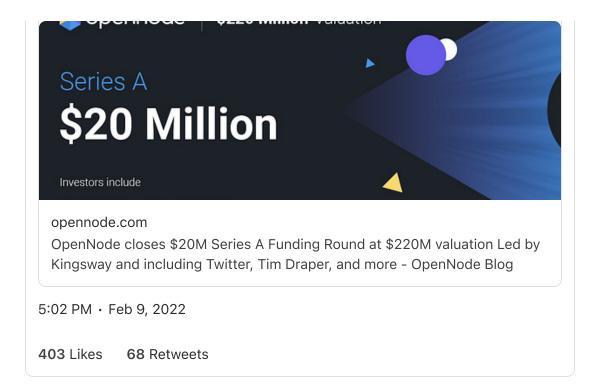
News & Updates

Lightning Launches

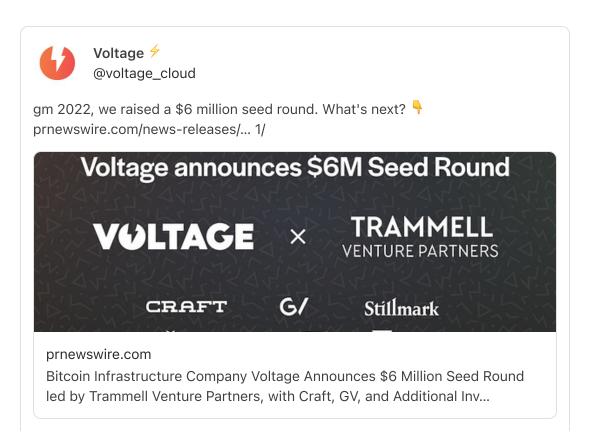


Kraken launched Lightning deposits and withdrawals! Pierre Rochard, the exchange's Bitcoin Product Manager, said "Lightning is a lot more efficient than on-chain Bitcoin while also still relying on on-chain Bitcoin's security, so it really is the best of both worlds."





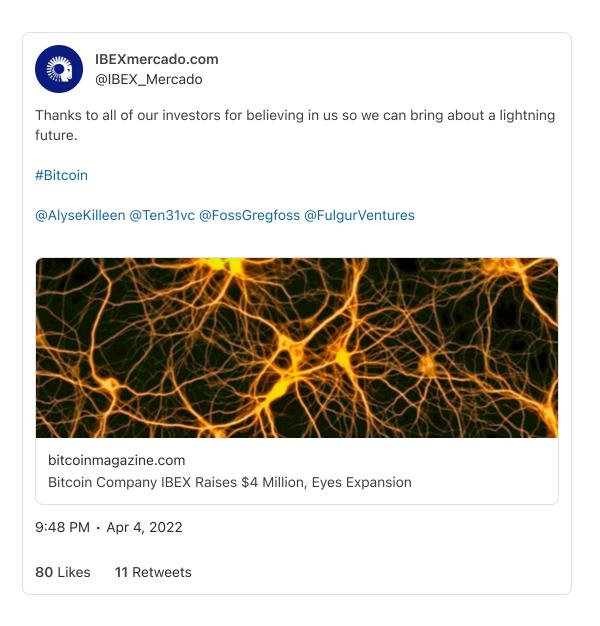
OpenNode raised a \$20M Series A funding round at a \$220M valuation. This newsletter has highlighted them closing deals every month from Substack to McDonald's in El Salvador; excited to have them continue to power Bitcoin and Lightning payments worldwide!



3:56 PM · Jan 20, 2022

197 Likes **36** Retweets

Voltage raised a \$6M seed round to fund its next phase of growth and hiring. The enterprise-grade Bitcoin and Lightning infrastructure provider has been focused on businesses and developers building Lightning applications, powering THNDR Games, Podcast Index, Amboss, Sphinx Chat, Zion, Carrot, and more. They're <u>looking for hackathons</u> to sponsor!

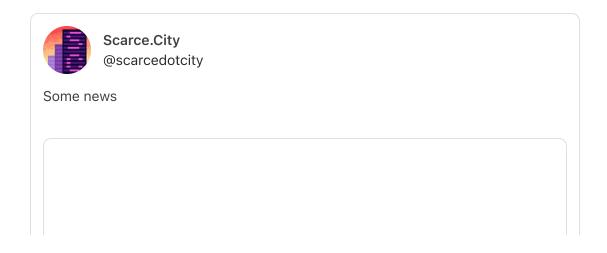


Ibex Mercado raised a \$4M seed round. After playing an enormously important role in the rollout of bitcoin as legal tender in El Salvador, the Guatemalan company eyes

expansion in the Americas and Europe.

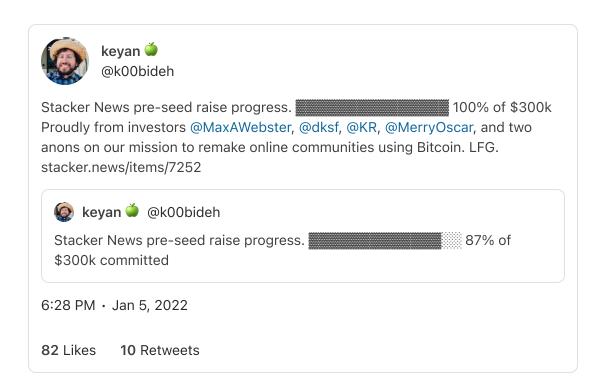


The Bitcoin Company announced they raised a \$2.1M seed round. They recently launched the beta of their Bitcoin rewards app, where users can buy gift cards from more than 150 brands, get sats back, and withdraw through the Lightning Network



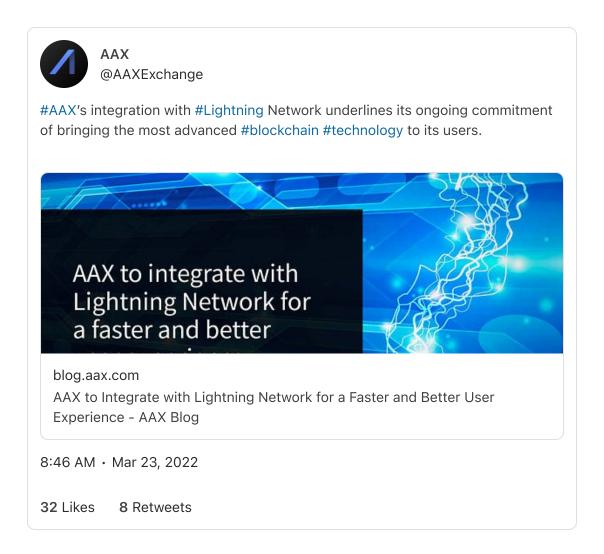


Scarce.City raised \$690,420 to continue fostering Bitcoin adoption through a cultural approach. Scarce City has run nearly 300 Lightning-powered auctions of limited edition art in both physical and digital formats since its launch in December 2020.



Stacker News raised a \$300k pre-seed round to remake online communities using Bitcoin. They went from 0 to 1,000+ registered users, 9k+ monthly visitors, and 40k+

page views per month in only six months. And they have users earning 350k+ sats for sharing quality content!



AAX, the Asia-Pacific-based institutional-grade exchange, announced integration with the Lightning Network. Their blog post highlights that the near-instantaneous transactions will open the door to increased possibilities for arbitrage traders on the exchange.

Lightning Stats

- Kraken processed more than 1,000 bitcoin deposits and withdrawals over the Lightning Network, only 5 days after launching the integration.
- Jameson Lopp compiled some of the metrics for 2021 and highlighted the huge growth the Lightning Network experienced last year. 124% more advertised

channels, 132% more nodes with channels, and 212% more bitcoin allocated to those channels.

- Diamond Hands, the Japanese node and developer community, <u>published a</u> great routing report with exciting stats! Their node's transaction volume has grown ~30% monthly on average since April 2021, and it now routes more than 10 BTC (\$380k+) per month. The median transaction size for the last three months is 47,298 sats (~\$18), and the average size is 103,962 sats (~\$40). Check their report for more details!
- Cold Sats, a Lightning node run by Steven Ellis, <u>started sharing monthly</u> <u>updates</u> on their nodes' earnings, stats, and a few charts. During January, Cold Sats routed 1.198B sats (>\$450k) with a profit of 526k sats (>\$200).
- Fountain, a Lightning-powered podcasting app, shared their numbers and made us even more bullish on Podcasting 2.0! In January, 791 new podcasts started receiving Lightning payments (more than any other month in history), deposits increased 250%, and transactions increased 52%.
- Sitnob shared that 36% of their deposits/withdrawals were done through the Lightning Network from August to December 2021. Bullish!
- Bitfinex's average transaction size is increasing! Paolo Ardoino shared their stats in February and 100 BTC were transacted via LN across ~10k transactions.
- LN Markets <u>had an all-Time-high in routing activity in February</u>, forwarding more than 37 BTC worth of payments through their Lightning node.

Lightning Ecosystem

- Andy Schroder <u>published an update of his Board A0</u>, the first building block of a Lightning Network-enabled energy grid. He's making micropayments to pay for his Tesla Model 3 as it charges!
- Azteco, who sells vouchers redeemable directly over LN, launched <u>its biggest</u> <u>integration!</u> By partnering with Flash Group, they're now integrated with the South African banks NedBank and TymeBank, which add up to 4M users that now have direct access to Lightning via Azteco. Huge!

- Alphapoint was tapped by the government of El Salvador to build the new Chivo wallet. They have been improving the user experience, with a special focus on Lightning.
- LN Markets <u>launched Bitcoin options trading</u>, and <u>released a Python package</u> that makes it easy for developers to connect to their API. The plebs have built a number of fun trading bots/scripts for LN Markets, like <u>the Twitch trading bot</u>, <u>automatic futures hedging</u>, and even <u>a bot that creates random orders</u>.
- Satsback <u>launched a complete rebranding</u> of their platform. Satsback V2 is the final merge between Satsback and Stekking. Combined, they have more than 10k affiliated online stores where their users can receive sats back from their purchases.
- Wavlake <u>released a new version</u> of their Lightning-powered website for musicians with WebLN support. They also removed Pinata/IPFS in favor of a traditional CDN provider, focusing on decentralizing the payment experience with Lightning first. Musicians, register for <u>their beta waitlist!</u>
- StarBackr, a platform for creators to monetize their content through the Lightning Network, released their own wallet.
- Lightning Address and LNURL continue being widely adopted by wallets and services. <u>Bottlepay</u> v1.8.7 integrated LNURL and <u>Tippin</u>, <u>Bipa</u>, <u>LNPay</u>, and <u>Wallet of Satoshi</u> all have some level of Lightning Address support now.
- BitcoinJungle, an organization <u>building a Bitcoin Beach-like community</u> in Costa Rica, <u>released their own Lightning wallet</u> using Galoy's codebase. Praia Bitcoin, a similar organization from Brazil, <u>teamed up with Openoms to make launching Bitcoin banks like these more accessible</u>, in a self-hosted environment.
- The Giving Block is now accepting Lightning donations to their Crypto Adoption Fund through their partnership with Zebedee. Your donation goes to all their US-based, pro-crypto nonprofits!
- Kollider is now available as an Umbrel app, and in the Lightning mobile wallets Breez and Blixt. P2P derivatives trading over Lightning is growing and attracting a lot of the big market makers in the space.
- Stattrak is a new Esports fantasy game where users build their own team with real Esports pro players and earn sats based on how they play in real tournaments!

All powered by **Zebedee** and the Lightning Network!

- Thndr Games released two new Lightning-powered games! Thndr Bay allows users to earn bitcoin as they solve each level of the game by forming groups of three or more matching bubble creatures. And <u>SATSSS</u> brings back the Nokia-classic Snake game, with Satoshi-steroids!
- Impervious wrote a functionality overview of their browser. The browser uses Lightning, DIDs, a DIDComm system, WebRTC, IPFS, and more to power the P2P internet.
- Amboss <u>released a bunch of new features this past month</u>: automatically saved Static Channel Backups, node classifications, enhanced capacity map, and more. Super useful!
- **Bitcoin Beach** together with New Story Charity <u>announced the first Bitcoin</u> <u>affordable housing project</u> with mortgages paid in Lightning. Amazing!
- LaHaus, LATAM proptech, closed the first real estate transaction with the Lightning Network in Colombia.
- Q Hexa now has Lightning accounts using a bring-your-own-node model. Users connect their self-hosted LND node and start using Hexa's mobile app to interface with it.
- Start9 Labs announced EmbassyOS 0.3.0, with improvements in the base architecture and UI design, alternative marketplaces, enhanced dev tools and much more.
- Galoy <u>published a paper on self-balancing fee structures for inbound liquidity</u>.

 They outline how self-balancing fee structures can help Bitcoin banks charge market rates for each user even when using their liquidity as a swap service.
- Strike is widening access to their Creators API, previously available only for Twitter. They launched PlebPay as an example of the API's capabilities. It took only 4 hours to build it in an internal hackathon! And they launched their app in Argentina!
- Ben Arc keeps hacking and inventing awesome hardware devices. <u>His new BitcoinPoS combines</u> offline and online Lightning Network, onchain, and LNURL-withdraw for refunds and OTC!

- Laisee, little red envelopes with money traditionally gifted for Lunar New Year, were upgraded this year to Lightning!
- **Zebedee** shared a doc describing the path to implementing Lightning Address aimed at service providers. It describes all the required and recommended LUDs (lnurl specs) as well as necessary APIs for a service willing to support Lightning Address.
- Bitkarrot wrote a new Python library that consumes the LNBits API, making it easier to spin up a Lightning Network application. Lightning development gets easier every day!
- Fountain released a podcaster wallet, where podcast producers can claim their shows, and see their earnings or messages sent by their listeners through the Lightning Network. v0.3.10 of their podcast app has cross-platform Lightning comments and more!
- ratiopharm Ulm, a top-ranked team in the German national basketball league, is now accepting Lightning payments using the Breez Point of Sale thanks to the plebs! Bottom-up adoption is the best possible adoption.
- Breez <u>published a new build</u> with Spanish, Finnish, and Portuguese translation progress, podcast player enhancements, and new apps. Also, check the great article that Breez CEO Roy Sheinfeld wrote on <u>"Lightning as a Liquidity Network"</u>.
- Blixt <u>v0.4.0</u> was released with <u>updated lnd</u>, improvements in wallet restoration, and more. It's exciting to see new wallets growing and watch their developers contributing to the standardization of the <u>Lightning protocol</u> at the <u>application</u> level.
- Steven Ellis wrote a great thread on his experience migrating from a Raspberry Pi 4 to more powerful hardware. Plebs are leveling up their game!
- Alby <u>built a Go implementation of an LNDhub server</u>. LNDhub is the open-sourced backend of Bluewallet, that allows anyone to deploy their own "custodial wallet" to their family and friends. Their v1.6.0 release <u>activated Alby-hosted</u> <u>wallets</u> for users who are not running their own nodes.
- PlebLab organized the SATx hackathon, and, as usual for Lightning hackathons, many great projects were born during the weekend of March 12th-

13th. Pleb.FM, a crowd-funded DJ, was the big winner with their ongoing Lightning auction that decides the next song in the queue. <u>Check all the participants and what they built!</u>

- MIT Bitcoin Club is also organizing a hackathon May 6-7, we hope to see more Lightning projects created there!
- LN Router released a new feature that proposes high-performing nodes that optimize your payment speed and graph position. Severin Alex Bühler wrote a blog post on some of the metrics he researched for this feature.
- Buck Perley <u>updated his lsat-js library</u> to fully compatible with Aperture, the reverse proxy software that allows web services to authenticate paid users without a username or password.
- La Librería de Satoshi is a new Bitcoin studying community focused in Spanish-speaking Latin America. <u>They started a book club on Mastering the</u> <u>Lightning Network</u> by Andreas Antonopoulos, Olaoluwa Osuntokun, and Rene Pickhardt.
- Zeus v0.6.0 is available for iOS and Android. The new version includes a full redesign, LNURL-auth support, and coin control.
- **BitcoinVN's** OTC desk <u>is now offering trades settled via the Lightning Network</u> for an amount of up to an equivalent of 20,000 USD per transaction.
- LQWD Fintech wants to improve connectivity and reduce the latency of payments in the Lightning Network. That's why they're adding more nodes to the network hosted in different parts of the world: they have new nodes in Italy, Ireland, Sweden, France, England, Singapore, Germany, and Indonesia.
- Lightning Escrow is a non-custodial escrow service using the Lightning Network, explained in more detail during the Austin BTC Club by the CEO, Tristan Bietsch. They were accepted to Tim Draper's Bitcoin Studio, excited to see what they produce!
- Geyser launched a social crowdfunding platform powered by the Lightning Network. It's like Kickstarter, but with microtransactions, low fees, and the ability for fundraisers to receive directly to their node. They were also accepted into Tim Draper's Bitcoin Studio first cohort, bullish!

- Mash, the browser-based Lightning wallet that allows creators, builders, streamers to charge their users directly in a pay-as-you-go manner, released two demo apps to showcase how their wallet works: Prophecy Bitcoin and Mashing Monsters.
- LN Capital, a company building capital management software for routing nodes, raised a pre-seed round from Seetee and RunwayFbu. They will release v0.1-beta of their first tool, Torq, this month.
- Satimoto <u>promises to allow users</u> to charge their electric vehicles at tens of thousands of charge points by streaming Lightning payments. Their early access program is open, sign up for it on their website today!

Lightning Labs News

Product

<u>Lightning Terminal</u> has had numerous updates now that it has been brought to the web. Terminal users can now send/receive payments, set fees for their channels, check additional details on their nodes, and enjoy background improvements in stability and UX.

The focus on shipping educational content for developers and node operators has continued with new additions to both our <u>Builder's Guides to the LND Galaxy</u> (like <u>Macaroons, LSAT, Aperture, Send Messages with Keysend</u>, and <u>Debugging LND</u>) and our <u>Youtube channel</u> (like <u>Get Connected with Lightning Node Connect, Managing A Lightning Node with Terminal</u>, and <u>Building Paid APIs with Bitcoin</u>).

Media

Director of BD Ryan Gentry <u>chatted about Lightning adoption</u> on Choice's podcast and <u>hosted a panel on "Lightning for Plebs"</u> at TABConf.

Head of Lightning Liquidity Alex Bosworth shared his vision on the future of the Lightning Network on the Connect the World podcast, and spoke about Scaling LND at

TabConf.

Engineer Elle Mouton <u>did a deep dive on the differences and similarities between</u> <u>different static invoices</u> LNURL, Offers, and AMP at Advancing Bitcoin (full video soon).

Senior Lightning Infrastructure Engineer Oliver Gugger <u>talked about Taproot and MuSig2 on Lightning</u> at Advancing Bitcoin (full video soon).

Hiring

Interested in helping us build out key infrastructure to support the growth of the Lightning Network? We are hiring for a <u>Lightning Infrastructure Engineer!</u>

Other roles include:

<u>Senior Engineering Manager, Cryptographic Protocol Engineer, Technical Product</u>

<u>Manager, Head of Talent and Culture, Marketing Lead, People and Business Operations,</u>

<u>Frontend Application Developer</u>

Join us in making magical internet money a reality! 🎄

Want to get involved? Join the LND Developer Community on Slack.

Meams





Comments



Write a comment...

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Back to the Bitcoin Future: Now's the Time to Build With Lightning 🚙 👉 🔌





Welcome to the latest edition of the Lightning Lab, a newsletter filled with Lightning Network updates, community coverage, and, of course, memes! In this issue, we discuss how the Lightning Network community continues to build and grow despite broader market turbulence, a State of Lightning report from Arcane Research, a call to action to build Decentralized Finance on Bitcoin and Lightning from Ross Stevens, Nic Carter, and Allen Farrington, and a host of new network statistics and ecosystem updates including a Bitcoin 2022 recap!

Back to the Bitcoin Future 🚗 🦠





Summer 2022 has kicked off with global markets in turmoil: inflation at 40 year highs, real rates moving higher as the economy begins to slow, NASDAQ down 30% from all-time highs, and general strife in the altcoin market. At the same time, the Lightning Network has been unaffected as our community of builders continues to focus on building the future of money. Public network capacity has grown by 20% already YTD to over 4000 BTC, and, like Doc and McFly in a DeLorean getting struck by Lightning, we're just getting started.

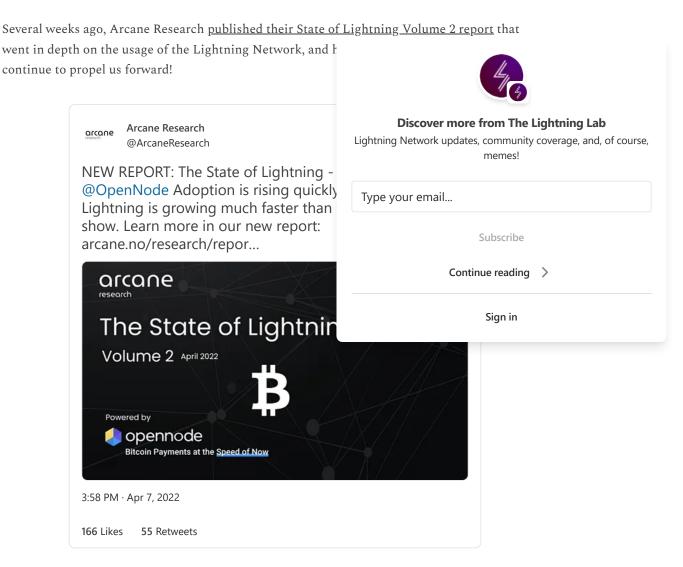


This past weekend, Ross Stevens, Nic Carter, and Allen Farrington wrote a paper titled "On Impossible Things Before Breakfast." They follow-up an insightful critique of the Terra stablecoin collapse and DeFi in general with a focus on the signal in the noise: the Lightning Network, Taro making Lightning a multi-asset network, and the possibilities that will be built on said network. The authors want us to:

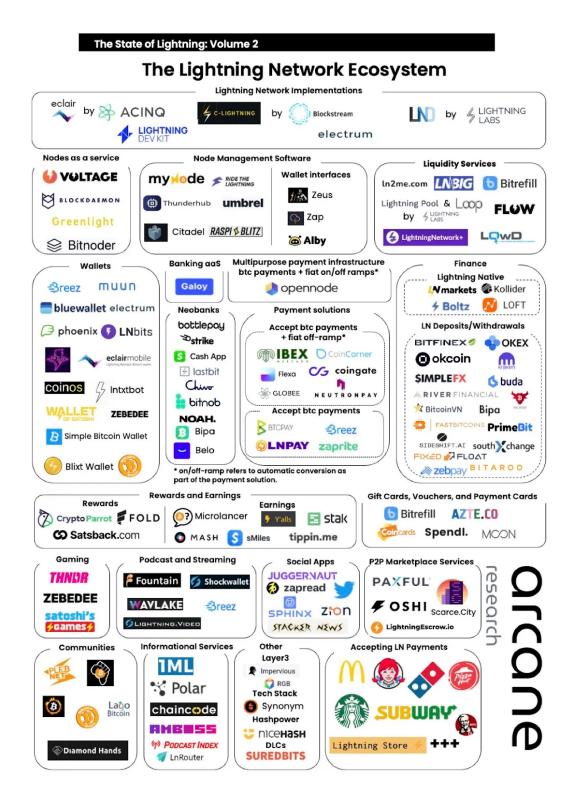
"Imagine an ecosystem in which the building blocks of financial and capital markets are freely accessible to all without navigation of technical bottlenecks or economic middlemen; in which their workings are transparently inspectable and auditable on the basis of free and open-source code; in which the architecture of all marketplaces operate on these principles; in which this constitution lends itself naturally to programmability at origin and interoperability thereafter; and, in which, due to the combination of the aforementioned

factors, no individual or entity can maliciously or politically impact market activity in any form, including advantaging themselves or disadvantaging others."

That's the future we're going back to, building an ecosystem of globally available, permissionless, and universally verifiable financial services. Already today, as the authors note, "The Lightning Network will allow anyone – individuals, SMEs, institutions, etc. – to send domestic or international payments of any size, with unlimited frequency, without bank intermediaries, nearly instantly, and essentially for free." We look forward to expanding on that ecosystem with Taro soon.



The report includes a foreword from the inimitable Lyn Alden, an Ecosystem Overview, aggregated transactional data from private Lightning companies, discussion about the fundraising activity in the Lightning Network, and a update to their market map.



Their research uncovered a new data point in favor of one of our favorite themes: Lightning's high utility-to-speculation ratio. The below chart shows Lightning payment volume in two categories: speculative usage with exchanges (gray) and non-speculative usage everywhere else (black).

The State of Lightning: Volume 2

Lightning Network payment volume peaked in November and has since retracted somewhat. This development does not, however, fairly depict the underlying adoption trend.

In November, a high volume of deposits and withdrawals to exchanges with a super hot bitcoin market blurs the statistics. If we exclude deposits and withdrawals from trading services from the payment volume, we see that all other payments actually dipped in November but have since grown to new highs.

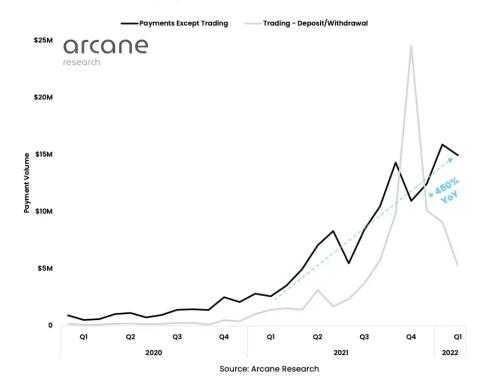


Figure S2 - Lightning Payments Except for Deposits/Withdrawals to trading services

This makes it even more clear that while speculators come and go, the Lightning Network has found product market fit with a core group of transactors who are growing its network effect by transacting on a daily basis. We <u>discussed this network effect in depth</u> last November, specifically how large capital increases in public network capacity are actually a *lagging indicator* of increasing network utility. This utility will only continue to grow as those transactors convince friends, local merchants, and new businesses to join the network. We can't wait to see what this chart looks like in 6 months!

We highly recommend <u>reading the full report</u> to understand exactly what's going on in the Lightning ecosystem, where growth is coming from, and what to expect next. Congratulations to **Arcane Research** for another great report, we look forward to more research institutions producing content like this as the network continues to grow!

News & Updates

Lightning Launches



Robinhood just announced they are integrating the Lightning Network.

Eventually everyone will.

5:34 PM · Apr 7, 2022

5,955 Likes 565 Retweets

Robinhood, the popular stock and cryptocurrency trading app, <u>announced its plans</u> to integrate the Lightning Network into its platform for speedier BTC transactions. Imagine instantly transferring value from **Robinhood** to **Kraken**, no banks required!



BREAKING: Jack Mallers announces Strike partnership with NCR which will enable #Bitcoin payments in stores like McDonald's, Whole Foods, Chipotle, Macys, and Safeway in the USA.

9:09 PM · Apr 7, 2022

4.488 Likes 807 Retweets

Strike announced an integration with Shopify, who powers >1M merchants across 175 countries, a partnership with NCR, the world's largest Point-of-Sale supplier, and a partnership with Blackhawk Networks, a prepaid payments provider for firms like McDonald's and Wal-Mart. Merchant adoption of the Lightning Network is accelerating!

BitPay, an early Bitcoin payments provider, <u>is now offering their customers</u> the ability to receive payments over the Lightning Network. This is a testament to both the maturity of the network and the demand from users for the improved Bitcoin payment experience the Lightning Network provides over on-chain.



I wanted to share that we are starting a new company called @lightspark to explore, build and extend the capabilities and utility of #Bitcoin. As a first step, we're

actively assembling a team to dive deeper into the Lightning Network. (1/3)

7:00 PM · May 12, 2022

5,442 Likes 641 Retweets

Lightspark, a new Bitcoin and Lightning infrastructure company founded by David Marcus (former cryptocurrency head at Meta and president at Paypal), <u>announced a reported \$175M fundraise</u> co-led by Paradigm and a16z crypto.

Mash, the browser-based Lightning wallet that allows creators, builders, streamers to charge their users directly in a pay-as-you-go manner, <u>announced they raised a \$6M seed round</u> co-led by Castle Islands Ventures and Whitecap VP.

Pnkfrg, a new gaming studio building mobile free-to-play (F2P) games on the Lightning Network, <u>raised a \$3M seed round</u> led by LVP and Initial Capital. The studio based in Berlin and Helsinki includes team leads from the Candy Crush Saga.

Impervious <u>successfully raised a seed round</u> for the development of a mobile internet browser built on top of Impervious and future peer-to-peer (P2P) applications. Check a <u>sneak peek of their browser capabilities</u> at their Bitcoin 2022 announcement in Miami.

Lightning Stats

- Thndr Games just reached 1,000,000 transactions sent via the Lightning Network as prizes to their players. Half of that only from the last 7 months!
- LN Markets <u>doubled their volume of payments routed over the Lightning Network</u>, during the past 6 months. For the month of May, they <u>routed 33.58 BTC (>\$1M)</u> across 17,887 payments.
- OpenNode <u>has generated over 74M invoices</u> across their Lightning infrastructure in total. Here's to one of the most experienced Lightning companies in the space, and to the next 74M invoices!
- Bitcoin Smiles reached the mark of 1000 contributors, totalling 1.93 BTC (~\$80k) raised! Not a surprise that 98.7% of the donations were done over Lightning.
- Kraken had 2,500 deposits and withdrawals and their routing node earned 1.6M sats over 3k forwards. Only several weeks after launch, they have the 5th largest LN node, with more than 150 BTC in capacity.
- Amboss shared they had over 200k unique visitors and over 1M page views in the past nine months. That's awesome!
- 31 Voltage's Lightning node routed an average of 16.5M sats per day in the last 30 days.
- LightningNetwork+ reached 700+ BTC capacity opened through swaps on their platform designed to facilitate collaborative Lightning channel opens.
- Diamond Hands, a prominent Japanese routing node, <u>forwarded 10k payments totaling</u>
 17 BTC (\$500k) of volume in May.

Lightning Ecosystem

- Morgan Stanley <u>published a report entitled "Buying a Coffee with Crypto"</u> where they discuss how Bitcoin over Lightning is "more practical" for small payments than a debit card. They also think the "first step towards mass adoption of crypto as a means of payment will be through stablecoins," sounds like Taro fans in the making!
- CNBC <u>published an article</u> about an LN payment from their reporter in Miami to a Ukrainian refugee in Poland who was able to 1) download a mobile Lightning wallet 2) receive the payment and 3) withdraw the value in physical cash from a Bitcoin ATM all in less than 3 minutes. Amazing.
- Stripe <u>launched an App Marketplace for merchants</u> featuring OpenNode as one of its first applications! This will allow all Stripe merchants to convert their incoming payments to Bitcoin.
- Nik Bhatia wrote a new article in his newsletter "The Bitcoin Layer" where he explored the implications of Taro and expressed his bullishness on the Lightning Network and the industry that has sprung up upon it.
- Voltage announced two new products that have been under development: Surge, a monitoring product for insights and alerts, and their next-gen platform that promises to offer scalable Lightning nodes, APIs, developer tools, and more. They also announced a new Startup Program enabling early-stage startups to save on Lightning infrastructure costs in their first year!
- Vida is a new social network and communication platform where your followers need to
 pay an amount of sats to send you a message, watch your streams or call your phone.
 They've also integrated with the Strike API for USD payments.
- Anita Posch is raising funds for Bitcoin for Fairness on Geyser. Fund, the Lightningbased crowdfunding platform. The aim is to support the growth of grassroots Bitcoin communities in emerging countries.
- Noah, an all-in-one personal finance app powered by Lightning, just <u>released their app</u> for beta testers. Users can now send and receive bitcoin, have a savings account, or spend without selling their sats with the Noah card.
- sv Adopting Bitcoin announced their second conference in El Salvador on November 15–17th. It will be exciting to see the growth of Lightning in the country after a full year of grassroot initiatives and adoption!
- Tauros, a Mexican Bitcoin exchange, is now integrated with the Lightning Network through a partnership with Ibex Mercado.
- AR Fiwind, an Argentinian exchange, <u>enabled Lightning deposits and withdrawals</u>, thanks to an integration with OpenNode.
- **S** Voltpay is a new Point-of-Sale app in Australia that makes it easy for merchants to accept Lightning payments using a familiar shopping cart interface.
- CoinCorner announced "The Bolt Card", an offline Lightning contactless card powered by NFC and LNURL. No Visa or Mastercard, only Lightning, with <u>several different designs!</u>

- Moon <u>introduced the ability</u> to add user's purchased cards to Apple Pay, Google Pay, and Samsung Pay. The new "Tap to Pay" functionality is available for US customers, who can now more easily live on Bitcoin.
- Synonym released their Blocktank LSP, a set of software tools that businesses, apps, web platforms or Bitcoiners can use to monetize Lightning Network connections and automatically manage channel liquidity.
- Amboss launched Magma, a peer-to-peer marketplace for channels on the Lightning Network. They included promises in each channel sale for duration and routing fee settings, and will monitor each channel closely and track performance for reputation.
- **Sottlepay** introduced Lightning Multiplexer, an open-source SQL-based external invoice database for LND with multi-node receive support. Exciting to see more open-source tooling built on top of LND!
- **ZEBEDEE** announced the launch of Bitcoin Miner, a new Lightning-powered game from Fumb Games. They heard you liked stacking sats, so here's a game where you can stack sats while stacking sats!
- Start9 Labs <u>added four new Lightning services</u> to their self-hosted node solution Embassy: Lightning Terminal, LNDg, Balance of Satoshis, and Lightning Jet.
- Fountain, the Lightning-powered podcasting app, <u>released a new update</u> supporting Lightning Address, user splits, activity notifications and skip controls. The UX improvements in the podcasting 2.0 space are a perfect example of accelerating adoption, there are now over <u>7,000 podcasts on the Lightning Network!</u>
- Reacher.me is an e-mail forwarding service, built using Strike's API, that requests a Lightning tip for the email to go through.
- The Bitcoin Company became a Lightning Service Provider and launched Lightning withdrawals. Now any third party merchant can sell gift cards or event tickets on their app.
- Qala, the African program training Bitcoin and Lightning engineers, has identified their first cohort of trainees. Thirteen candidates were selected from more than 800 applicants to join the 3-month program, bullish!
- ShopinBit, one of Europe's largest crypto-exclusive online shops, is now running their own LND node thanks to Voltage, allowing their users to pay via Lightning.
- Satsback, the bitcoin rewards app, <u>introduced automatic payouts</u> with Lightning Address for their European users. Streaming sats continues to be a theme. They also <u>connected an additional 2,800 online stores</u> from Spain, Italy and Norway.
- Breez published an article on the different ways web developers can integrate Lightning into their applications, like Lightning Address, WebLN, LNC, LSATs, and more. Lightning and the web were made for each other!
- Blixt published a sneak peek of their upcoming macOS version of Blixt Wallet.

 Lightning from your desktop!

- Tuentyuno is an easy way to integrate Lightning payments into a website, built by René Aaron. Beautiful widgets, no fees, instant payouts.
- Robotechy is now selling Ben Arc's LNPoS in their online store, providing merchants with a super inexpensive Lightning-powered Point of Sale device.
- Alby enabled tipping on Github, adding up to their long list of supported websites, like Youtube, Medium, Reddit, Vimeo, Twitter, BitcoinTV, etc. And of course, they won a huge trophy for best pitch from a Lightning company during Bitcoin 2022, congratulations!
- Lightning Tip Bot now allows you to connect a self-custodied LND node or LNBits account to the popular Telegram bot for node management, expanding the options beyond custodial only.
- * CardCoins announced support for Lightning Address, explaining how it solves key business needs and improves UX for their customers.
- LNBingo is a free-to-play Bingo game where the winners of each draw are paid instantly in Bitcoin over the Lightning Network. The app derives the winning numbers from the hash of the last confirmed block on the Bitcoin blockchain and the prizes are delivered using LNURL-Withdrawl.
- Andy Schroder displayed his new Distributed Charge system at Bitcoin 2022, showing all the attendees how his Tesla could stream sats to a charging station in real-time.
- Geyser.Fund added a host of new features to their crowdfunding platform, including rewards, perks, emoji badges, on-chain funding, and an Alby integration.
- Mash published a demo video showing how developers can integrate their Lightning wallet to their websites. With Mash, users can pay for value as they interact with contents.
- GT Osmo Wallet, a Guatemalan exchange, integrated the Lightning Network allowing its users to deposit and withdraw funds to their accounts quickly and cheaply.
- Robosats, a P2P LN exchange, raised its max trade size to 1.5m sats changed their default bond size, and recently crossed 2 BTC of contracted volume.

Now's the Time to Build With Lightning 💠



Builders in the Lightning ecosystem continue to build like the future depends on it! In April, the global Bitcoin community descended upon Miami for Bitcoin 2022, and, just like last year's Bitcoin 2021 conference, Lightning was ubiquitous. The conference sold tickets over Lightning powered by OpenNode, vendors inside the conference sold refreshments over Lightning powered by Ibex Mercado, and Lightning developers were a mainstay on stage. Not only was Lightning ubiquitous, however, but the accelerating pace of adoption this newsletter has cataloged over the last year seems to have itself accelerated: new Lightning launch and fundraise announcements are happening faster and at a bigger scale than ever before!



I still can't believe that we just had the opportunity to have a fireside chat with @starkness at @TheBitcoinConf! I'd really like to thank @murchandamus and all of the Bitcoin devs I've met so far for helping me learn about this space and answering my technical questions! 10:30 PM · Apr 8, 2022

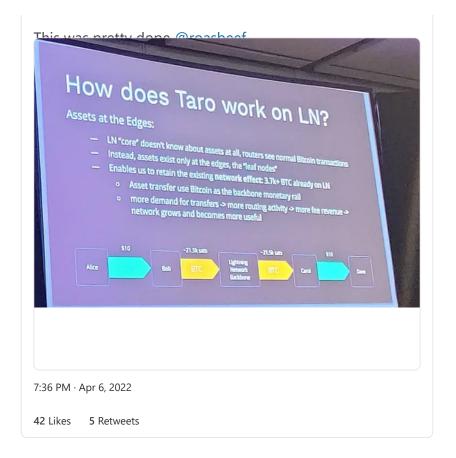
199 Likes 17 Retweets

Lightning Labs CEO Elizabeth Stark gave a keynote featuring the teenage founders of GenBitcoin, Ishaana Misra and Autumn Domingo. They asked about her vision for hyperbitcoinization, which led to an in-depth discussion into what "bitcoinizing the dollar" means with the new Taro protocol. They also discussed what makes Lightning different from the rest of the crypto ecosystem, with a focus on how the Lightning community prioritizes Number of People Go Up and growing bitcoin's network effects, as opposed to building tokens on tokens on tokens with no real utility.



Elizabeth also <u>spoke about Taro and bitcoinizing the dollar</u> on Bloomberg TV, <u>about the Future of Bitcoin and Lightning</u> at Crypto Bahamas, and <u>was named one of the top 100 most influential women in finance</u> by Barron's!

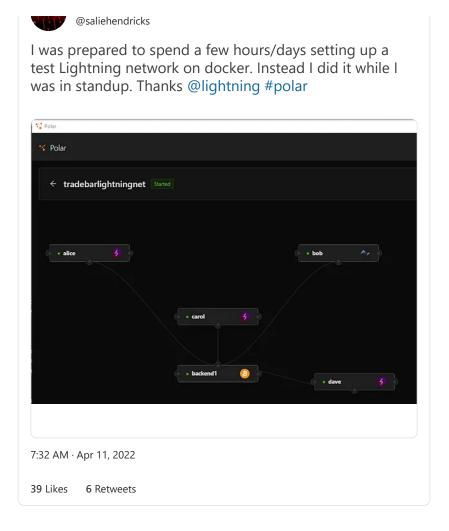




Lightning Labs CTO Laolu Osuntokun gave a keynote on the new Taro protocol. After explaining that taro is a root vegetable with a taproot structure eaten across Africa, South America and Asia (where Lightning is being adopted at a rapid pace), and primarily produced in his home country of Nigeria, he walked the crowd through the protocol design and how Taro assets natively integrate with the Lightning Network. The audience at the high-signal Open Source Stage received Laolu's expert tutelage in cutting-edge research at his customary Lightning speed!

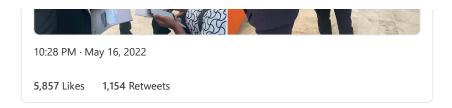


Even those outside of the core Lightning community can see the rapid pace of growth and development, with world-renowned investors like Cathie Wood bullish on the prospects of what new developers can build with Lightning technology.



And for good reason, as the Lightning aspects of the conference convinced new developers to try out tools like <u>Lightning Polar</u> (created by Lightning Labs's own **Jamal James**) for the first time. They were amazed at the frictionless experience, a testament to all the builders in the community!



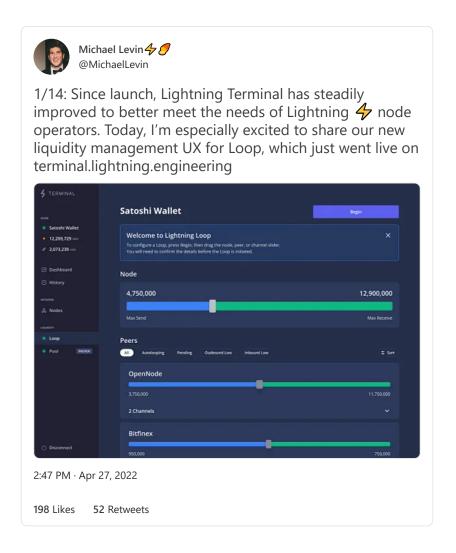


A little over a month later, central bankers from 44 countries around the world <u>traveled to El Salvador</u> for a meeting of the Alliance for Financial Inclusion. Included in the three day agenda was a heavy dose of Bitcoin education, Lightning payment experiences, and testimony from residents of Bitcoin Beach in El Zonte. Probably nothing...

Bitcoin 2022 made it clear that Lightning adoption is progressing at a breakneck pace, that a developer friendly experience is the key to such adoption, and that the next generation of developers are ready to help take the network to the next level. Onwards!

Lightning Labs News

Product



Over the past quarter, we have been making consistent improvements to <u>Terminal</u> to better meet the needs of node operators. The Loop UI received a major upgrade, making it easier than ever to manage liquidity and ensure high reliability for received payments. Additional improvements include improved stability and persistence of the connection to an operator's node, Lightning send and receive functionality, the ability to open and close channels, ability to set fees within channels, and a channel details menu. Plus, for more security and flexibility, we have created the option for node operators to provide read-only access to <u>Terminal</u>. We will continue to listen to user feedback to prioritize changes and new features. Please continue to reach out with any questions or feedback through our <u>Slack channel</u>.

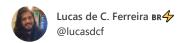
For Lightning Loop, we <u>recently increased the max swap size</u> from 0.6 BTC to 1.2 BTC to meet the needs of users who want larger swaps. Further, in the latest client release, we've added experiments around pathfinding to increase reliability especially for larger Loop swaps.

We <u>released lnd v0.14.3</u>, a minor release focused on a series of bug fixes including: remote signer fixes, proper handling of 3rd party anchor sweeps, and a key payment consistency fix.

Finally, we also want to highlight our <u>Taro documentation</u> on the Lightning Labs Builder Guide as a great reference for any developers who want to dive deeper into the Taro protocol design, and <u>our newest developer video</u> walking through the Taro protocol. These documents should provide a more concise overview of the protocol, but the <u>Taro BIPs</u> can provide more detail if necessary.

Community

We started an LND PR Review Club, where external developers can learn our codebase by performing PR reviews guided by frequent contributors.



4/ LND is an OSS project, which means @lightning welcomes contributions from developers outside our team. Important features like HTLC Interceptor, Postgres support, and others were implemented by teams like @Breez_Tech, @bottlepay, @MuunWallet, @Strike, @voltage_cloud, etc.

7:36 PM · May 5, 2022

7 Likes 3 Retweets

The Review Club will happen every two weeks on Thursdays at 10am PT / 1pm ET / 5pm UTC in the <u>lnd slack channel</u> #review-club. We welcome suggestions for PRs and volunteers for hosting sessions.

Media

CEO Elizabeth Stark appeared on a panel with Meltem Demirors at Crypto Bahamas where they explained the transformative role the Lightning Network and Bitcoin play in facilitating cross-border payments, expanding financial inclusion in emerging markets and creating interoperability in ways never before seen in the history of money. She also spoke on a panel on human rights and financial freedom with Lyn Alden, Dario Sneidermanis, and Hong Fang at the Oslo Freedom Forum to answer the question Can Bitcoin Reach a Billion People? Spoiler alert: yes!

In addition to his Bitcoin 2022 keynote, CTO Olaoluwa Osuntokun also <u>participated in a panel</u> on the tradeoffs of Lightning implementations, gave an interview to Coindesk TV on the growth of the Lightning Network and the launch of Taro, and discussed Taro and the need for digital assets on Bitcoin on <u>Tales from the Crypt with Marty Bent</u> and on <u>Stephan Livera Podcast</u>.

Director of BD Ryan Gentry joined a panel on Lightning Service Providers and Liquidity at the Bitcoin 2022 Conference, and had his blog post on Taro read aloud by Guy Swann on Bitcoin Audible.

Product Growth Lead Michael Levin <u>was interviewed by Kevin Rooke</u> on the dual adoption curves of Bitcoin, Lightning Labs and its products, the importance of the Plebnet community and the future of the Lightning Network and Taro.

Developer Advocate Hannah Rosenberg <u>talked about the future of Lightning development</u> on a panel at Bitcoin 2022.

Senior Lightning Infrastructure Engineer Oliver Gugger <u>discussed Defining The Standards of Taproot & Multisig</u> on a panel at Bitcoin 2022, and <u>presented the current state and next steps for Taproot on Lightning</u> at Advancing Bitcoin

Engineer Elle Mouton compared different static invoice standards (LNURL, Offers and AMP) at Advancing Bitcoin, and spoke about simplifying the Lightning Network in an interview for the Connect the World podcast.

Hiring

Are you a pragmatic senior software engineer who embraces the DevOps mindset and want to improve our developer experience? We are hiring for a <u>Platform Engineer!</u>

Other roles include:

Lightning Infrastructure Engineer, Senior Engineering Manager, Cryptographic Protocol
Engineer, Technical Product Manager, Head of Talent and Culture, Marketing Lead, People and
Business Operations

Join us in making magical internet money a reality! 🙍

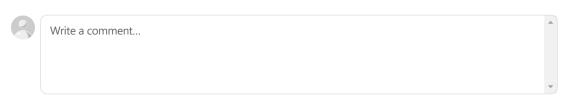
Want to get involved? Join the LND Developer Community on Slack.

Meams



Thanks for reading!

2 Comments



Basilio Bentivegna Writes Aroundbitcoin.io Newsletter Jun 18, 2022

Collapse Reply Collapse

Ramon Jun 8, 2022
first of all, fan of everything that lighting labs is doing! love to be part of such a great movement. 1
little thing... i miss Connect the World podcast + Satoshi Radio Ring of Fire in this all...
www.connecttheworld.live for more info

Collapse Collapse

Case 3:22-cv-07789-WHO Document 39-9 Filed 02/27/23 Page 38 of 58

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<u>Substack</u> is the home for great writing

Decentralizing Global FX With Taro: How Bitcoin Renders "Cross-Border" Payments Obsolete





Welcome to the latest edition of the Lightning Lab, a newsletter filled with Lightning Network updates, community coverage, and, of course, memes! In this issue, we discuss how Taro decentralizes the global FX market, how bitcoin renders "cross-border" payments obsolete, how Lightning has continued to grow throughout the bear market, and as always highlight a host of exciting community updates!

Decentralizing Global FX With Taro



In April, we announced Taro, a new Taproot-powered protocol for issuing assets on the bitcoin blockchain that can be sent over the Lightning Network for instant, high volume, low fee transactions. Since then, we have received lots of useful community feedback, which we incorporated into the <u>draft Bitcoin Improvement Proposals (BIPs)</u> specifying the protocol, and have been hard at work implementing Taro as a standalone daemon.

After talking about Taro with the community, one thing has become very clear: in a world of omnipresent communications connectivity, nobody says "cross-border messaging" anymore. Taro promises to do the same thing to "cross-border payments" by decentralizing the entire global FX market into a protocol that can run on a Raspberry Pi by anyone, anywhere.



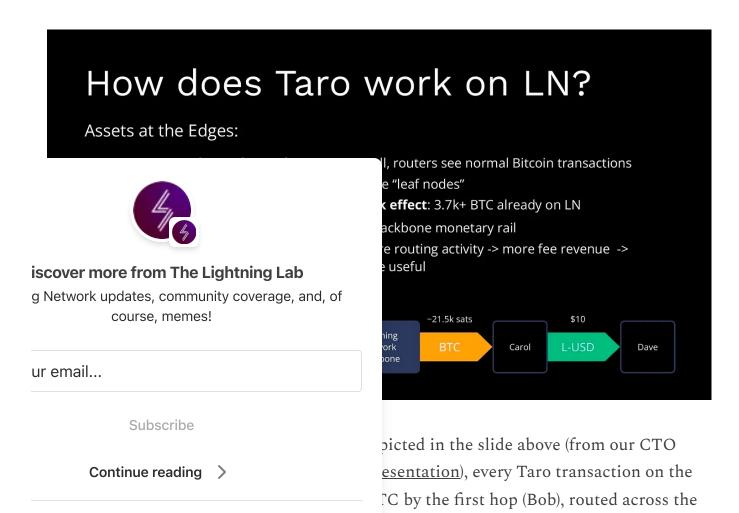
elizabeth stark @starkness

@arcbtc @LeoAW The end goal is to make #bitcoin the means through which we route all the world's currencies, obviously. :)

3:56 PM · Aug 6, 2022

14 Likes 2 Retweets

At a high level, Taro makes Bitcoin and Lightning multi-asset networks. Users will be able to open up Taro channels that plug in at the edges and interoperate with the existing bitcoin channels that make up the Lightning Network today. That means instead of starting from scratch and bootstrapping a new ecosystem of nodes and liquidity, Taro will leverage the existing network effects of both the infrastructure that's been built out over the last several years plus the 4000+ BTC allocated to the network today as a *global routing currency*.



USD above, or converted into different assets such as USD to EUR or USD to BTC. This has the potential to be industry-shattering for foreign exchange markets, and opens up

Sign in

to a Taro asset by the last hop before the

and received in the same asset such as L-

enormous opportunities for fintech founders (especially in emerging markets), routing node operators, and all businesses connected to the Lightning Network. Few have understood this as well as Bitrefill CEO Sergej Kotliar.



Sergej Kotliar @ziggamon

In conclusion: I think Taro can achieve even more for Lightning than ERC20 did for Ethereum. It would be fair to call it Lightning 2.0.

All this of course depends on many factors, in a chaotic world, not least getting all this to work, and into the hands of the reckless crowd.

1:08 PM · Jun 28, 2022

70 Likes 2 Retweets

By integrating with Taro, Bob and Carol have turned their Lightning nodes into "edge nodes" which will now process an instantaneous conversion from L-USD into BTC or vice versa, for a small fee. Prior to this, only centralized exchanges could offer this experience to users. But now, Taro decentralizes this service and distributes its earnings across all the nodes on the Lightning Network that opt in to Taro. This is a brand new market for liquidity provisioning and market making, and each new entrant to the market makes the Lightning Network more efficient and improves the payments experience for everybody.

Of course, Taro is not just restricted to USD stablecoins. Fast forward a few years, and we expect to see major currencies such as EUR, JPY, or GBP issued on Taro and transferred across the Lightning Network. We are also excited to see more localized and emerging market currencies flourish on Taro. A community bank could issue a local stablecoin on Taro and it would only need a handful of nodes or liquidity providers to make a market between the local currency and the BTC core of the Lightning Network to be connected to a global community of buyers and sellers. No permissioning required!

When Alice goes to pay Dave in the example above, Dave will include an L-USD/BTC conversion rate in the invoice presented to Alice. Alice's software will then look for a

route like it would for any BTC payment, and try to find the most reliable path to Dave charging the lowest fees (with L-USD/BTC conversion fees treated as routing fees). Once she sends the payment, each edge node (Bob and Carol) converts L-USD into BTC, or vice versa, at the pre-agreed rate Dave included in the invoice regardless of price volatility while the payment is in flight.

Because edge nodes have opted into converting the assets in question, they therefore charge routing fees for doing so, which could also cover unexpected volatility. We expect those fees to stay low because Lightning payments take seconds or less to complete, so the price volatility that can occur while a payment is in-flight would likely be minimal. Plus, any edge node that starts charging conversion fees that are too high compared to the rest of the market can be undercut by competition at any time...just like how Lightning works today!

The opportunity provided by Taro bringing assets like stablecoins to the Lightning Network is clearly enormous. Every year, businesses and consumers <u>pay \$1.9 trillion in fees</u> (2% of global GDP) for the right to pay each other. Visa's <u>65% operating margin</u> is one of the highest of all the companies in the S&P 500 index, and this margin is Lightning and Taro's opportunity. They'll never see it coming.

News & Updates

Lightning Launches



André Neves © @andreneves

Thrilled to announce that @zebedeeio has raised our Series B round led by Kingsway Capital, and joined by The Raine Group, and Square Enix!

We're bringing #Bitcoin to the masses through gaming *

Stay tuned for really exciting news in the coming weeks!



venturebeat.com

Zebedee raised \$35M from investors including Square Enix for blockchain game payments

10:25 AM · Jul 20, 2022

145 Likes 28 Retweets

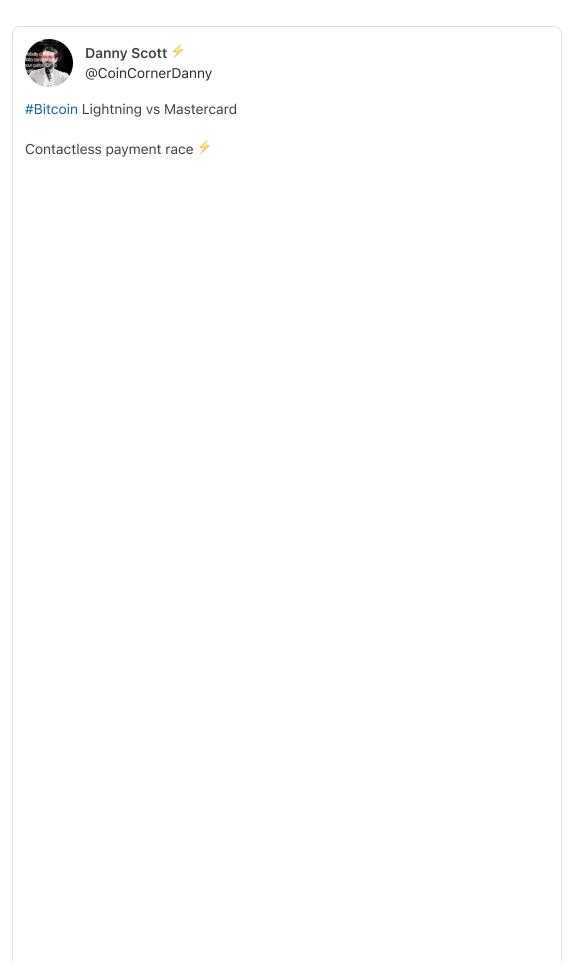
ZEBEDEE <u>announced their Series B round</u> led by Kingsway Capital. They raised \$35M and had Square Enix, the AAA game studio behind Final Fantasy, Dragon Quest and Kingdom Hearts, join the round. Bullish for gaming + Lightning!

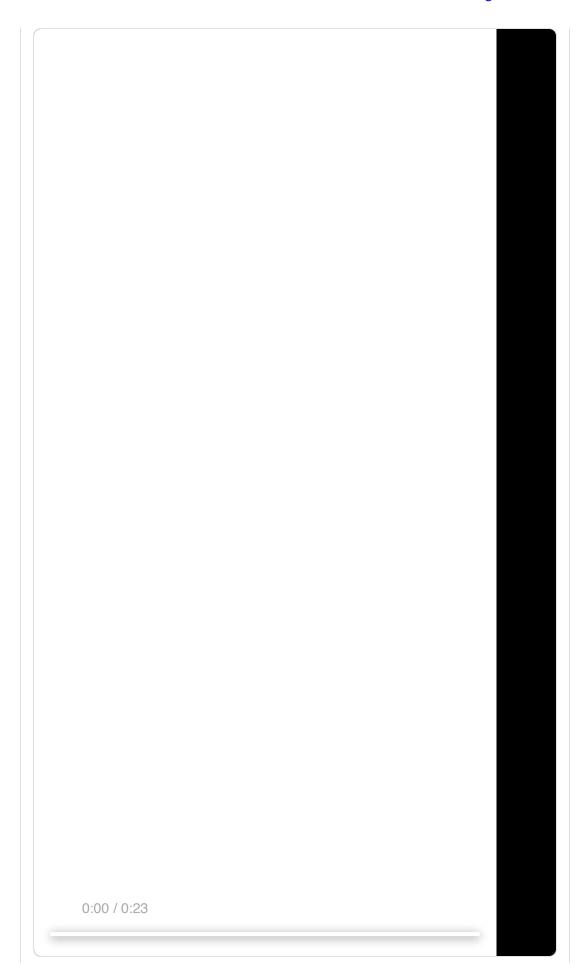
Fedi <u>raised a seed round of \$4.2M</u> to provide a user interface for Fedimint, an open-source protocol that leverages federated Chaumian Ecash mints to decentralize bitcoin custody and allow for privacy-friendly interoperability with the Lightning Network.

Galoy announced that they raised \$4M to further develop their bitcoin-native banking infrastructure, most famous for supporting the Bitcoin Beach community in El Salvador. Alongside the fundraise, they also announced a new product "Stablesats" which allow users to hold a synthetic dollar position within their wallets. We love to see the emerging markets focus!

Stacker News <u>raised a \$1.25M seed round</u> led by Max Webster. Founded by Keyan Kousha, Stacker News aims to become the next Reddit, powered by the Lightning Network.

Lemon Cash, an Argentinian digital wallet and cryptocurrency broker, <u>integrated</u>
<u>Lightning deposits and withdrawals</u> for their 1M+ customers using OpenNode's API.





3:22 PM · Jul 25, 2022

2,458 Likes 678 Retweets

Joe Hall, a reporter from Coindesk, filmed a "contactless payments race" where he tested which NFC payment completed faster: Coincorner's Bolt card over the Lightning Network, or a standard Mastercard. Spoiler alert: Lightning wins! 5

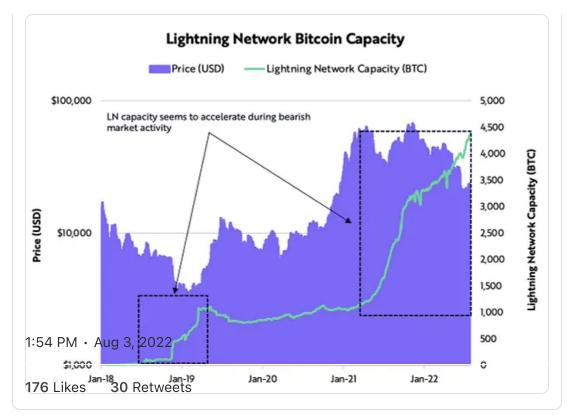
Lightning Stats

- LN Markets routed a daily all time high (ATH) of 4 BTC with their Lightning node and achieved a monthly ATH of 40 BTC routed in June. They've also reached an aggregate trading volume of \$500M. Congrats LNM on such steady growth!
- Podcasting 2.0 <u>has now been enabled</u> by over 8,000 podcasts. More than 1,000 podcasts started receiving value-for-value payments through the Lightning Network in June alone.
- Kollider forwarded 36 BTC with their 8 BTC capacity routing node during the month of June.
- Amboss shared that 192 unique nodes <u>have sold channels though Magma</u>, their liquidity marketplace, adding 28.22 BTC of liquidity to the Lightning Network.
- Wallet of Satoshi took 26+ months to do their first 1M Lightning payments, but only around six months to go from 2M to 3M payments, and about 4 months to hit 4M. Lightning adoption is accelerating!



Yassine Elmandjra @yassineARK

4/ Despite the bear market, LN capacity has reached an all time high. LN capacity growth seems to accelerate during bear markets, marking a shift in sentiment from exuberance and speculation to testing and building long-term solutions for bitcoin.



• X Yassine Elmandjra, an analyst at ARK Investment Management LLC, <u>noted</u> that <u>Lightning Network capacity</u> appears to accelerate during bearish market activity. Bear markets are for builders, especially in this community.

Lightning Ecosystem

- Purse, the OG escrow service that connects users with bitcoin to users with Amazon gift cards, <u>launched Lightning Network support</u>. Now their users can buy goods from Amazon with 15% discounts thanks to the fast and cheap LN rails.
- Foxbit is now supporting Lightning Network payments in their Point of Sale product Foxbit Pay. Now Brazilian merchants will be able to receive lightning-fast Bitcoin adding payments and cash it out to BRL.
- RSS.com partnered with Alby to become the first podcasting hosting company to enable Value 4 Value payments, allowing their creators to receive Lightning donations. Go Podcasting 2.0!
- Machankura allows Africans to send Lightning payments using USSD (interactive text menus for basic cellphones) on their phones, totally offline. It's as

- easy as sending an SMS. The service is available in Ghana, Kenya, Malawi, Nigeria, South Africa, and Uganda.
- The European Central Bank <u>published a research paper</u> written by its director of general market operations with an entire section exploring Bitcoin and Lightning as the potential holy grail for cross-border payments. Just wait until they hear about Taro!
- The Federal Reserve Bank of Cleveland <u>also published a paper</u>, specifically focused on the Lightning Network, looking at the association between LN adoption and reduced blockchain congestion, pointing out that Lightning is "turning Bitcoin into money."
- Paolo Ardoino, CTO of Bitfinex, spoke about building stablecoins on the Lightning Network on the Bitcoin Standard podcast. He discussed Taro's potential and his conviction that Lightning as a technology is much more suitable decentralized value transfer than centralized blockchains.
- Stacker News released upgrades to their web of trust algorithm, daily rewards, user notifications, and launched a new product called LNCal that allows people to share their public calendar and have people pay them sats to book their time.
- Weet is a new P2P video and chat app built with Lightning Network micropayments. The app uses the new Holepunch SDK/Framework, which is basically torrent for datastreams web content, and will be open-sourced by December 2022.
- Magic Internet Money: A Book About Bitcoin is now a Lightning-powered book, thanks to Mash's Lightning integration tools. The re-release of the original manuscript showcases a new way to monetize written content based on usage.
- The Bitcoin Adventure <u>hosted a educational weekend festival</u> for families in Kent, UK with speakers, workshops, music, camping, and a veranda where attendees could buy beer and food with Sats over Lightning, powered by Coincorner!
- Messari wrote an article on how to earn yield on Bitcoin with the Lightning Network, generated from routing transactions and selling liquidity.

- River added a description of Taro and other related terms to their River Learn glossary.
- Summer of Bitcoin, a global, online summer internship program focused on bitcoin open-source development, is coming to a close. The program has produced amazing projects including Dhananjay Purohit's content distribution proxy implementing the Lightning Service Authentication Token (LSAT) standard for password-free authentication and Priyansh Rastogi's contributions to LND.
- Satbox.tv just launched a new version of their pay-sats-as-you-view video streaming service that introduces credits, an LSAT implementation. Users purchase Credits up front for 1 sat and spend them by adding videos to the queue or continuing the current video.
- ZEBEDEE <u>integrated their Gamertags</u> into a VR-based game. Gamers can now play Beatsaber in their Oculus Quest 2 and stream sats to their ZEBEDEE wallet.
- Gamertron <u>launched Sats-Man</u>, a Pac-Man-like game in which you can earn sats over Lightning. A 10 year old developer built this using ZEBEDEE's SDK, is there a better example of how easy it is to build on Lightning?
- Viker Games just enabled play-to-earn bitcoin rewards on three classic video games. Solitaire, Sudoku, and Missing Letters will all provide bitcoin rewards on the Lightning Network through ZEBEDEE's mobile application.
- Strike expanded its Point-of-Sale beta testing to include Poynt by GoDaddy, and have also released their API documentation and Dashboard to the public.

 Developers can now generate API keys with custom key permissions through the dashboard and build their Lightning apps!
- Pleb TLV is cultivating the next generation of Bitcoin and Lightning startups in Tel-Aviv. They are helping entrepreneurs ideate, build their products, and develop a marketing strategy. The organization will offer access to their vast network of Bitcoin and Lightning companies, and investors. Selected ventures will receive office space and initial capital.
- EN Marketplace Thailand is a Thai language community on Facebook with more than 11k members where merchants and other businesses in Thailand promote their products and services using Lightning payments.

- Fountain users can now receive Lightning payments for listening to podcasts. Earning sats in a podcast app is a great incentive to scale Value for Value, since now users can tip their favorite creators without first needing to purchase Bitcoin. Their latest release also includes faster boosts, ability to send replies, offline listening support, and much more.
- Bottlepay <u>launched version 2.0 of their app</u> with Single Euro Payment Transfers (SEPA) integration enabling instant EUR transfers, and much more. They also <u>added support for stateless invoices</u> to Lightning Multiplexer, an open source infrastructure for multi-node scaling, allowing invoices to be generated without impacting disk growth.
- Bitfinex added LNURL payments support to their mobile app.
- Diamond Hands, the largest LN community in Japan, <u>partnered with a top real</u> estate firm in Tokyo for a joint-research project to further adoption.
- RoboSats users can now receive their sats directly on their cold storage, through on-the-fly submarine swaps, a similar protocol used by Lightning Loop to swap on-chain and off-chain funds.
- Bolt.Observer recently released their Explorer product, which enables users to drill down into the Lightning Network's graph data, explore nodes close and afar, find the next node they want to open a channel to, or just learn something interesting about the Lightning Network and its participants.
- Voltage <u>added an easy one-click feature</u> for their users to claim 500,000 sats of inbound liquidity. They also <u>wrote a great article</u> on how brands and their identity can be established on the Lightning Network. Running a node creates a compounding effect of trust.
- Seyser <u>launched Geyser Grants</u>, a platform where any Bitcoin creator, educator, or creative can apply to bootstrap their initiatives.
- Ringtools is a Ring of Fire coordination app built by the Satoshi Radio community (the same doing the Connect the World podcast). They have also integrated Inc-web for allowing their users to more easily connect their nodes!
- **Saprite**, the Bitcoin invoicing, project management, and expense tracking platform <u>integrated LND</u>.

- Exponential Layers is a new Lightning Network explorer, where you can customize your node and see node details, setup custom reports and notifications, analyze network capacity, node categories, and more.
- René Aaron wrote <u>a guide on how to setup a Lightning NFC tag</u> so you can easily onboard your friends to Bitcoin.
- LNBits PoS system now supports tips. Merchants can choose a percentage option and have the tips going automatically to their employees. Another interesting addition was the ability to write LNURL withdrawal link onto a NFC device (card, wristband, etc).
- Cold Sats, a popular Lightning node, <u>open sourced the tool they use to create</u> the beautiful charts they share with their routing data statistics.
- Amboss released a new feature called Healthchecks, where node operators can display their online status and uptime performance in their page.
- BTCPay has a <u>new release with a Lightning dashboard, invoice receipts,</u>
 <u>LNURL-withdraw support</u> for payouts and refunds.
- Tatacoa is a new custodial Lightning wallet and POS from Colombia. They've been doing local meetups and educating the local community about Bitcoin and Lightning.
- Bolt.Fun introduced a new feature, Stories, a Lightning powered interaction that uses WebLN to tip content creators with sats.
- Atlanta BitDevs is hosting a Taro reading group. Each session will be focused in one of the five BIPs with Bryan Nonni from LibertyX leading the initial discussion. The second reading group happened last Tuesday August 2nd, and the third is scheduled for Tuesday August 16th.!
- The bitcoin++ hackathon in Austin, Texas produced many interesting projects detailed in a blog post by Thriller Bitcoin. We particularly liked team Zaploy, a collaboration enabling web-hooks on Galoy for Zaprite for easier Lightning business accounting, and TransLnd, allowing nodes to generate new Lightning public keys for each new LN invoice to improve privacy.
- Spark Wallet (not to be confused with Shesek's <u>Spark Wallet</u>) is a new custodial <u>Lightning wallet</u> with focus on UX, ability to purchase gift cards and lots of

rewards.

How Bitcoin Renders "Cross-Border" Payments Obsolete ^Ş¥

The last two years have brought an explosion of growth to the Lightning Network, particularly in emerging markets like LATAM (e.g. El Salvador, Guatemala, Argentina, Brazil), West Africa (e.g. Nigeria, Ghana), and SE Asia (e.g. Vietnam, Philippines).



@andreneves Like they currently are on L1s, stablecoins will be good for onboarding in emerging markets.

I understand where we're heading to (out of fiat) but stablecoins do a great job of onboarding.

Same reason why bitcoin was put on lightning

12:42 PM · Dec 8, 2021

29 Likes 1 Retweet

As this growth phase progressed, we heard a common theme from entrepreneurs (like Bernard Parah, Bitnob CEO) and community members (like Alex Gladstein, Human Rights Foundation CSO) on the ground: users enjoyed the instant settlement and low fee experience of transacting over the Lightning Network, but really needed the stability of the dollar in order to adopt LN full time.



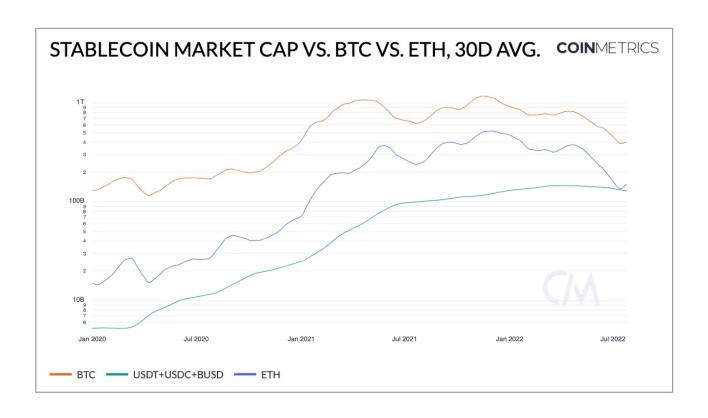
Tech platforms are trying to "go crypto" for international payments.

But what if dollar accounts connected by Lightning are superior to complicated stablecoin schemes?

Harder to rent-seek and censor, but otherwise... who says no?
6:27 AM · Oct 20, 2021

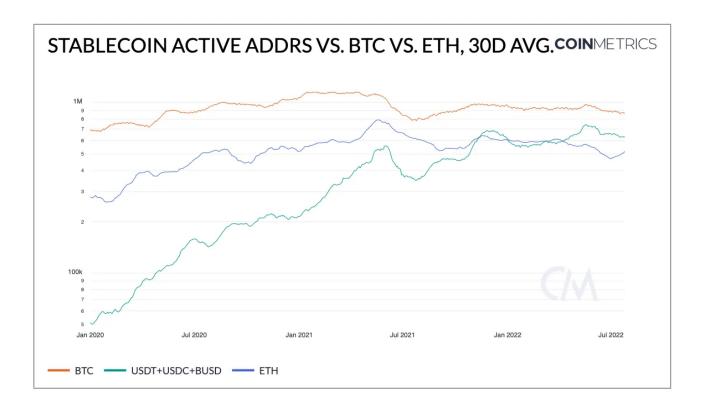
181 Likes 12 Retweets

For emerging market users, the usage of bitcoin the asset, comes with difficulties due to volatility and their day-to-day costs. But, bitcoin the network provides a superior payments system vs. the existing banking rails in these areas. Enter <u>Taro</u>, and the new capability for stablecoin issuers to mint assets on the Bitcoin blockchain that natively interoperate with the Lightning Network, leveraging the existing bitcoin liquidity as a routing core. Fiat-backed stablecoins are one of the only applications with undeniable product-market fit in the broader crypto ecosystem today: according to Coinmetrics, since the start of 2020 the total supply of fiat-backed stablecoins has grown to nearly equal the market cap of ETH.

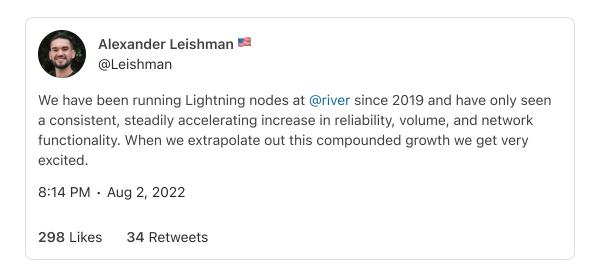


Additionally, the same fiat-backed stablecoins actually flipped ETH (!) in terms of active addresses (a proxy for daily active users) in April 2022 and have retained a lead of ~100k

active addresses over the last several months.



Combining the unmatched payments experience of the Lightning Network with stablecoins, one of the only crypto assets outside of BTC with evidence of product-market fit, is an incredibly potent combination. We expect that bringing Taro to market and making Lightning a multi-asset network will dramatically expand the Total Addressable Market for those building Lightning applications. Alex Leishman, CEO of River Financial, understands this better than almost anybody.



How dramatically? In 2021, Visa processed \$13T of total volume and Mastercard processed \$7.7T of total volume for a total of \$20.7T across the two major card networks. Arcane Research estimates that in 2021 the Lightning Network as a whole processed a total of ~\$200M of total volume. So as we stay focused on building the best network we can, builders and routing node operators on the Lightning Network have a potential 100,000x in transaction volume to look forward to over the next several years!

Lightning Labs News

Product

In June, we launched <u>Ind 0.15</u>, including some of the most advanced production quality Taproot features like multiple script signing paths and experimental MuSig2 API support. This Taproot work lays the foundation for Taro assets on Lightning. Further, Ind 0.15 also incorporates one of the most user requested features in that redundant data has been removed from the revocation log bucket in order to reduce the db size and improve node performance. Initial testing shows that users can expect around 95% reduction in disk space consumed by new channel updates, a huge improvement! You can read more about the lnd 0.15 release in <u>our blog post.</u>

We've also been working on improving the Loop experience on <u>Terminal</u>. Specifically, we've heard from users about the need for liquidity automation and the complexity of using Autoloop through the command line interface. So, we launched <u>Autoloop</u> on Lightning <u>Terminal</u> to help node operators <u>manage their liquidity</u> in a more efficient, automated way.

Further, to help make node management easier anywhere at any time, we optimized the <u>Terminal</u> experience for mobile devices. So now, node operators <u>can easily open</u> <u>channels</u>, manage liquidity, and monitor their node on the go!

Finally, to help builders create magical non-custodial Lightning experiences, we released an <u>alpha version of Lightning Node Connect (LNC)</u> for the web. LNC allows for the secure and private connection of Lightning Nodes to web experiences like <u>Terminal</u>. For more information, check out <u>this video from the Bolt.fun hackathon explaining LNC</u>

in detail. We can't wait to see what the community builds with this game changing developer tool!

Community

Two months ago, we started LND PR Review Club, where developers can learn our codebase by performing pull request reviews guided by Lightning Labs team members and other frequent contributors. We've hosted five meetings led by different developers thus far, and attendance and feedback has been great. If you missed these previous meetings, the notes, questions, and logs from the discussions can be found at lnd.reviews.

The Review Club happens every two weeks on Thursdays at 10am PT / 1pm ET in the lnd slack channel #review-club. We welcome suggestions for PRs and volunteers for hosting sessions.

Media

CEO Elizabeth Stark sat down for a fireside chat with Sarah Satoshi at the MIT Bitcoin Expo where they talked about the Bitcoin and the Lightning Network, its impact on emerging markets and on human rights, and about stablecoins on Lightning through Taro.

Director of Business Development Ryan Gentry gave an interview about Taro for the LN Markets newsletter.

Software Engineer Evan Kaloudis <u>did a workshop at Bolt.Fun on LNC-web</u>, a package built to help web developers get up and running building Lightning enabled web applications by connecting them directly with user's Lightning nodes.

Developer Advocate Hannah Rosenberg was also at Bolt.Fun, giving a workshop on LSATs and Aperture. LSATs offer developers both authentication, as well as a payment mechanism for paid APIs, and Aperture is a HTTP 402 reverse proxy using LSATs.

Hiring

Are you an experienced software engineer who embraces the DevOps mindset and wants to improve the Lightning developer experience? We are hiring for a <u>Platform Engineer!</u>

Other roles include:

<u>Lightning Infrastructure Engineer, Senior Engineering Manager, Cryptographic</u>

<u>Protocol Engineer, Technical Product Manager, People and Business Operations</u>

Join us in making magic internet money a reality! &

Want to get involved? Join the LND Developer Community on Slack.

Meams



JohnOttar @johnottar

@gladstein @LynAldenContact Amazing thread on lightning. Funfact: «Lyn» means «Lightning» in Norwegian. :)

3:33 AM · Aug 7, 2022

49 Likes 1 Retweet

Thanks for reading!

Comments



Write a comment...

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